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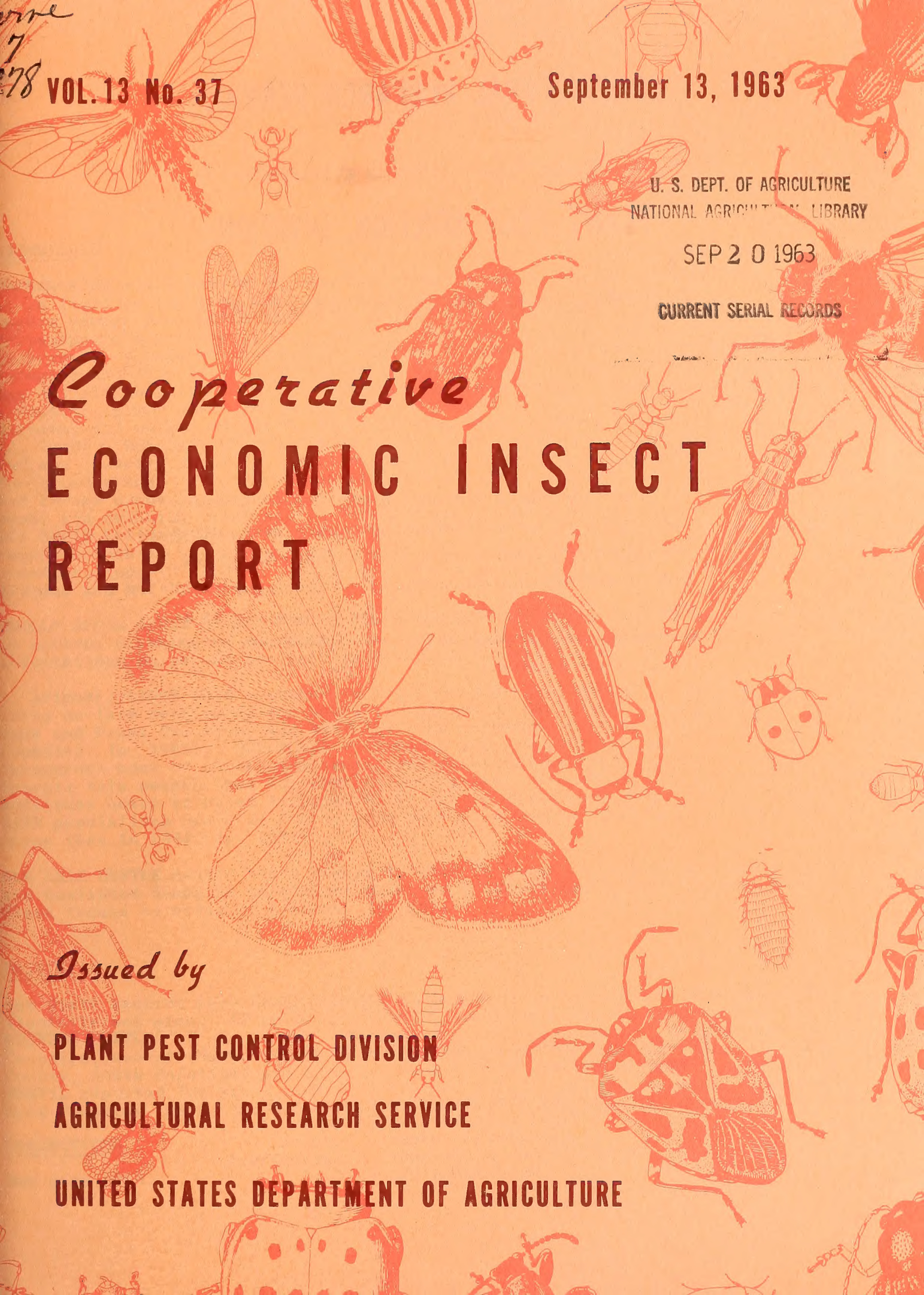

Cooperative
ECONOMIC INSECT REPORT

Issued by

PLANT PEST CONTROL DIVISION

AGRICULTURAL RESEARCH SERVICE

UNITED STATES DEPARTMENT OF AGRICULTURE

AGRICULTURAL RESEARCH SERVICE

PLANT PEST CONTROL DIVISION

SURVEY AND DETECTION OPERATIONS

The Cooperative Economic Insect Report is issued weekly as a service to American Agriculture. Its contents are compiled from information supplied by cooperating State, Federal, and industrial entomologists and other agricultural workers. In releasing this material the Division serves as a clearing house and does not assume responsibility for accuracy of the material.

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Survey and Detection Operations
Plant Pest Control Division
Agricultural Research Service
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Volume 13 September 13, 1963 Number 37

COOPERATIVE ECONOMIC INSECT REPORT

HIGHLIGHTS

GRASSHOPPER adult survey on cropland in North Dakota showed general infestation up in light rating from 1962, but slightly down in threatening rating; however, severe damage present in scattered fields except in eastern third of State. Grasshoppers migrating in many areas of Wisconsin; mating and egg laying increased. Damage to crops also reported to have increased. CORN EARWORM infested majority of soybean fields in upper Arkansas River Valley, Arkansas. Egg deposition still heavy in cotton in area and younger soybeans may become infested. Also, heavy and defoliating soybeans in parts of Mobile County, Alabama, and ranged medium to heavy on same crop in delta counties of Mississippi. (p. 1073). NORTHERN CORN ROOTWORM adults feeding on corn silks in areas of Indiana, causing incomplete filling of ears; losses as high as 30 percent in few localized areas. TWO-SPOTTED SPIDER MITE continues a principal problem on cereal and forage crops throughout Colorado. (p. 1074). RANGE CATERPILLAR extremely heavy and denuding rangeland in Farley-Abbott area of Colfax County, New Mexico. PEA APHID building up in Maryland, and increased in many alfalfa fields where regrowth lush in Wisconsin; increases noted in alfalfa in several Arizona counties. (pp. 1075-1076). BEAN LEAF BEETLE damaging soybeans in areas of Alabama and Maryland. (p. 1076).

WOOLLY APPLE APHID caused considerable damage to terminal growth of apple trees in several orchards in San Juan County, New Mexico. (p. 1077). BLACK PECAN APHID infestations on pecans heaviest in decade in Mobile County, Alabama. (p. 1078).

In Arizona, LYGUS BUGS continue to cause considerable damage to cotton, particularly on late developing top bolls; increases of SALT-MARSH CATERPILLAR noted in Yuma and Pinal Counties, and BEET ARMYWORM increased in Pinal and Maricopa Counties. (p. 1081). BOLLWORMS continue a problem in young and late cotton throughout most of northern Alabama, and infestations have been more severe in Georgia this season than for past several years. Egg deposition of CABBAGE LOOPER continues heavy in upper Arkansas River Valley of Arkansas. (p. 1082). SPIDER MITE populations heavy in Clovis area of Fresno County, California, where problem worse than in 1962. (p. 1083).

ELM LEAF BEETLE caused heavy damage to elms in areas of Arizona and New Mexico, and continues damaging throughout Oklahoma. LOCUST BORER heavy in many stands of black locust in areas of Alabama. (p. 1084).

DETECTION

New State records were SHEEP BOT FLY in Delaware and a NONSUBTERRANEAN TERMITE (Incisitermes minor) in Ohio. (p. 1087). New county/parish records were WHITE-FRINGED BEETLES in Lee County, Alabama; Chattahoochee, Early, Lowndes and Warren Counties, Georgia; Leon County, Florida; Lafourche Parish, Louisiana; Calhoun County, South Carolina; and Lincoln County, Tennessee. (p. 1089). ASIATIC OAK WEEVIL reported for first time from Scioto, Pike, Lawrence, Jackson, Vinton and Ross Counties, Ohio, and IMPORTED FIRE ANT from Coffee County, Georgia. (p. 1089).

CORRECTIONS

See page 1089.

SPECIAL REPORTS

Status of the Screw-worm in the Southwest. (p. 1086).

Occurrence of Periodical Cicadas in Tennessee - 1963. (map). (p. 1088).

Hawaiian Insect Notes. (p. 1093).

Spring and Early Summer Observations on the Alfalfa Weevil and Other Forage Crop Insects in Massachusetts - 1963. (p. 1095).

Estimated Losses and Production Costs Attributed to Insects and Other Arthropods Attacking Peaches, Pears, Sugar Beets and Onions in Colorado in 1962, and Alfalfa Hay and Cotton in New Mexico in 1962. (pp. 1097-1102).

Reports in this issue are for week ending September 6, unless otherwise indicated.

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WEATHER BUREAU 30-DAY OUTLOOK

SEPTEMBER 1963

The Weather Bureau's 30-day outlook for September calls for temperatures to average below seasonal normals over the eastern half of the country except for near to above normal along the gulf and south Atlantic coasts. Above normal averages are predicted over the western third of the Nation and near normal in unspecified areas. Rainfall is expected to exceed normal in a broad band extending from the Southern Plains through the Ohio Valley into the Northeast. Subnormal amounts are anticipated west of the Continental Divide and along the gulf coast. In the remainder of the country, precipitation should not depart greatly from normal.

Weather forecast given here is based on the official 30-day "Resume and Outlook" published twice a month by the Weather Bureau. You can subscribe through the Superintendent of Documents, Washington, D.C. 20250. Price $4.80 a year, $2.40 a half year.

WEATHER OF THE WEEK ENDING SEPTEMBER 9

At the beginning of the week, high pressure dominated the weather over the eastern third of the Nation. Skies were clear and winds were calm or light. A low pressure area, centered over central South Dakota, caused general cloudiness from the eastern slope of the Northern Rockies to Lake Michigan and southward over the Central Plains. Rain fell over much of the Dakotas, Minnesota, and Iowa. Scattered thunderstorms occurred in Kansas. Variable cloudiness prevailed from the Rocky Mountains westward to the Pacific. As the low pressure area moved eastward, it triggered a few tornadoes in southern Wisconsin and heavy thunderstorm activity from Michigan to Kansas. Hail fell from some of the thunderstorms. Cloudiness and severe weather increased eastward to New England. Sunshine predominated over the western, central, and southern portions of the country. By Saturday, the cold front associated with the low pressure area had moved to the Atlantic and storm activity was limited to some cloudiness along the northern Atlantic seaboard and a few showers farther south. Fog, which developed in the cool air mass, blanketed much of the Ohio Valley, the Lake region, the Appalachians, and parts of the Atlantic coast and New England on two or three forenoons over the weekend. In most areas, the fog dissipated by noon.

Scattered thunderstorms dumped an inch or more of rain at spots in the north-central Rockies, the west-central and southern Plains, and Florida on Saturday morning. But most of the Nation enjoyed pleasant weekend weather. Most areas

(Continued on page 1081)

CEREAL AND FORAGE INSECTS

GRASSHOPPERS - UTAH - Especially numerous and damaging at Bountiful, Davis County. (Rogers, Knowlton). NEBRASKA - Approximately 7-8 Melanoplus sp. per square yard in field margins in Otoe County, with light damage to corn. (Roselle). NORTH DAKOTA - Adult grasshopper survey on cropland completed. General infestation up in light rating from 1962, but slightly down in threatening rating; however, severe damage present on scattered fields throughout State except in eastern third of State. Heaviest economic damage occurred in southwest; corn, alfalfa, flax and late small grains involved. In this area, few alfalfa fields with up to 90 percent defoliation observed. (Wilson). WISCONSIN - Grasshoppers, principally Melanoplus femurrubrum, migrating in many areas; mating and egg laying increased. Reports of damage to crops also increased, although rains rejuvinated many alfalfa fields, masking extent of injury. Reports from Juneau and Kewaunee Counties indicate considerable clipping of alfalfa flowers in fields retained for seed. More pronounced incidence of diseased grasshoppers present in areas along Mississippi River. Populations in Washington, Waukesha, Jefferson and Sheboygan Counties showed marked increase from 1962, with 15-25 per square yard present in many alfalfa fields. (Wis. Ins. Sur.). OHIO - Heaviest M. differentialis populations observed in Pickaway, Ross and Fayette Counties. In Ross County (central area), soybeans 35 percent defoliated and field corn 45 percent defoliated along outer rows of field. M. differentialis ranged 20-25 per square yard along grassy roadside ditches. (Lyon). ALABAMA - Numerous grasshoppers noted feeding on soybeans. (McQueen).

CORN EARWORM (Heliothis zea) - NEVADA - Larval infestations lowest in several years in corn ears in southern Washoe County. (Gardella). NEW MEXICO - Generally light to moderate on field corn in San Juan County. A problem on home-garden corn throughout State; ruined planting of sweet corn at Bloomfield, San Juan County. (N. M. Coop. Rpt.). OKLAHOMA - Continues to feed on peanuts in south central areas; larvae ranged 1-4 per plant in Bryan County. (Okla. Coop. Sur.). ARKANSAS - Infestations observed in upper Arkansas River Valley where majority of soybean fields infested; treatments applied to most infested fields. Conditions indicate peak infestation occurred week ending August 31. Egg deposition still heavy in cotton in area and younger soybeans may become infested. Infestations have occurred in Lonoke and Arkansas Counties (east central) in addition to southeast area reported previous week. Infested 140-acre field in Washington County (northwest); very few soybeans grown in area. Larvae ranged 0-89 per 30 row feet in 10 of 13 soybean fields surveyed in Lonoke County. (Ark. Ins. Sur.). MISSISSIPPI - Medium to heavy on soybeans in delta counties. (Ouzts). SOUTH CAROLINA - Larvae mostly full grown in some soybean fields in Barnwell County. Larvae numerous in soybeans in Bamberg County; many still small. (Nettles et al.). NORTH CAROLINA - Heavy in one of 8 soybean fields examined in Martin, Washington and Beaufort Counties. Larvae averaged 48 per 25 feet of row in heavily infested Washington County field. Ranged 0-5 per 25 feet of row in other fields. (Mount). MARYLAND - Eggs light on stems, leaves and pods of soybeans in Wicomico and Worcester Counties; few small larvae also present. Infestations in pods may increase, as moth flights appear to be heavy. (U. Md., Ent. Dept.). ALABAMA - Heavy and defoliating soybeans in parts of Mobile County; some control difficulty noted. No larvae found on soybeans in northern counties. (Seibels et al.). OHIO - Little or no damage to sweet corn to September 6; adult flights continue low, with egg laying underway in southern area. (Richards).

FALL ARMYWORM (Laphygma frugiperda) - RHODE ISLAND - Probably this species, infested silage corn in Woodville section of Hopkinton, Washington County, August 8. Damage estimated at one thousand dollars. (Mathewson). DELAWARE - Present on young corn in an area of Sussex County. (MacCreary). MARYLAND - Larvae infesting 81 percent of plants in field of late corn for silage at Frederick, Frederick County. (U. Md., Ent. Dept.). GEORGIA - Light on millet in northwest area. (Johnson). ALABAMA - Light on Sudan grass in Marion County. (McQueen). ARKANSAS - None noted in 13 soybean fields checked in Lonoke County. (Ark. Ins. Sur.). OKLAHOMA - Continues to damage small grains in panhandle areas. (Okla. Coop. Sur.). ARIZONA - Larvae ranged 20-50 per 100 sweeps in Graham County alfalfa. (Ariz. Coop. Sur.).

EUROPEAN CORN BORER (Ostrinia nubilalis) - NEBRASKA - Late corn in Otoe County approximately 25 percent infested with fourth and fifth stage larvae. (Roselle). NORTH CAROLINA - Caused some damage to corn in northeastern Duplin County. (Federonko). DELAWARE - Infestation averaged 42 percent in 4 corn fields in Kent County. (Burbutis).

CORN LEAF APHID (Rhopalosiphum maidis) - MARYLAND - Moderate to heavy infestations continue conspicuous on field corn checked in Frederick County. Declining on field corn in Wicomico County. (U. Md., Ent. Dept.). OHIO - Populations decreasing substantially on field corn tassels near Chillicothe, Ross County; however, many aphids still found on ear silks. (Lyon). WISCONSIN - Alates commonly found in most alfalfa; small colonies present in oat and rye fields in Iowa and La Crosse Counties. (Wis. Ins. Sur.). WYOMING - Small numbers present on corn plants in Fremont and Hot Springs Counties, August 30. Ranged light to medium in Carbon County corn fields September 6. (Marks). ALABAMA - Heavy on Sudan grass in Marion County. (McQueen).

NORTHERN CORN ROOTWORM (Diabrotica longicornis) - MICHIGAN - Adults heavy and active on silks in a Branch County field continuously in corn. (Wiggins). INDIANA - Adults feeding on corn silks in Greene, Henry and Randolph Counties reported causing incomplete filling of ears. Losses in few localized areas reported as high as 30 percent. Adults also feeding on kernels on ear tips. (Gould, Matthew). OHIO - Light to moderate numbers noted feeding on silks of field corn in Jackson County, southern area. Adults ranged 3-5 per corn ear and 6-7 per 50 sweeps in alfalfa. (Lyon).

CEREAL LEAF BEETLE (Oulema melanopa) - MICHIGAN - Survey conducted in heavily infested area of Berrien County September 3-4; no immature forms found; few adults feeding on orchardgrass, switchgrass, foxtail, corn and reed canary grass. Significant numbers found only on reed canary grass; averaged 10 adults per 100 sweeps. Hibernating adults found in wide variety of places. (Ruppel, Ring).

SAP BEETLES - MICHIGAN - Adults of unspecified species common in injured cornstalks and damaged corn kernels in Ingham and Eaton Counties. (Seevers, Johnson).

RICE STINK BUG (Oebalus pugnax pugnax) - ARKANSAS - Survey in Lonoke County indicated slight reduction in numbers; counts in 18 fields checked regularly averaged 4 adults and 0.5 nymph per 100 rice heads, compared with 5 adults and 1 nymph previous week. (Ark. Ins. Sur.).

HESSIAN FLY (Phytophaga destructor) - INDIANA - Field populations of Race B, capable of infesting wheat varieties Dual, Monon, Redcoat and Reed, increasing in size and virulence. Samples from 180 certified wheat fields showed an increase over 1962 of W38 resistant wheats becoming infested by this species. No infested samples collected from Knox 62, a wheat having different source of resistance than W38, which indicates this variety maintaining resistance against Race B populations of P. destructor. (Gallun, Hatchett).

SORGHUM MIDGE (Contarinia sorghicola) - NEW MEXICO - Growers treating infested grain sorghum fields southeast of Clovis, Curry County. (N. M. Coop. Rpt.).

SPIDER MITES (Tetranychus spp.) - NEW MEXICO - Damage severe on foliage of field corn in many areas of San Juan County. (N. M. Coop. Rpt.). UTAH - Damage by T. telarius severe in few corn fields in Davis County, but light in most fields. (Knowlton, Rogers). COLORADO - T. telarius continues a principal problem on cereal and forage crops throughout State. (Bulla). MARYLAND - Tetranychus sp. caused serious damage to 10 acres of soybeans at Cambridge, Dorchester County. (U. Md., Ent. Dept.).

BANKS GRASS MITE (Oligonychus pratensis) - NEBRASKA - Damaged corn in panhandle area. (Hagen). Localized populations in south central areas ranged noneconomic to damaging in corn. (Roselle).

SOD WEBWORMS (Crambus spp.) - WASHINGTON - Adults abundant in Merion bluegrass lawns in Yakima, Yakima County, and Pullman, Whitman County. (Landis, Telford). NEBRASKA - Scattered populations causing moderate damage in Lancaster County. (Bergman). VIRGINIA - Severe in turf in cemetery at Clay Pool Hill, Tazewell County (Rowell, McDonald, Aug. 28); caused extensive damage to lawn in Wytheville, Wythe County (Grayson); severe in bluegrass lawn in Lexington, Rockbridge County (Tarpley, Craun). MARYLAND - Larvae caused heavy injury to several lawns in Bowie area, Prince Georges County. (U. Md., Ent. Dept.).

RANGE CATERPILLAR (Hemileuca oliviae) - NEW MEXICO - Extremely heavy numbers denuding rangeland in Farley-Abbott area, Colfax County. Movement almost army-like; denuding range of grass. (N. M. Coop. Rpt.).

SAGEBRUSH DEFOLIATOR (Aroga websteri) - NEVADA - Adults heavy in Elko area, Elko County; entering homes. (Earnist).

A BERMUDA GRASS MITE (Aceria cynodonis) - CALIFORNIA - Damaging Bermuda grass in Sacramento, Sacramento County, by causing failure of upper leaves to separate. Lawns cut regularly appear not to develop heavy infestations of this mite. (Cal. Coop. Rpt.).

ALFALFA CATERPILLAR (Colias eurytheme) - ARIZONA - Large adult flights still occurring in Graham and Yuma County alfalfa. (Ariz. Coop. Sur.). NEW MEXICO - Larvae ranged 0-40 per 100 sweeps in alfalfa checked in San Juan County. Some damage noted in heavier infested fields. (N. M. Coop. Rpt.). WISCONSIN - Larvae continue prevalent in most alfalfa; generally range 1-3 per sweep. (Wis. Ins. Sur.). OHIO - Larvae light in most alfalfa throughout southern area. (Lyon). MARYLAND - Light on alfalfa in Frederick County. (U. Md., Ent. Dept.).

CABBAGE LOOPER (Trichoplusia ni) - ALABAMA - Few noted on soybeans. (McQueen). MISSISSIPPI - Medium to heavy on soybeans in delta counties. (Ouzts). ARKANSAS - Ranged 0-3 per 30 feet of row in one of 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.). OKLAHOMA - Light in alfalfa in Major County, northwest; 3 per 10 sweeps. (Okla. Coop. Sur.).

GREEN CLOVERWORM (Plathypena scabra) - MARYLAND - Light to moderate on soybeans checked in Wicomico and Worcester Counties. (U. Md., Ent. Dept.). ARKANSAS - Ranged 0-66 per 30 feet of row in 12 of 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.).

GARDEN WEBWORM (Loxostege similalis) - OKLAHOMA - Light counts of 5 per 10 sweeps noted in Major County alfalfa. Heavy numbers reported in localized areas of Washington County, northeast. (Okla. Coop. Sur.).

LESSER CORNSTALK BORER (Elasmopalpus lignosellus) - OKLAHOMA - Damaging peanuts in most peanut-growing areas of State. (Okla. Coop. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - ARIZONA - Infestations spotty in Yuma County; controls applied to one field of alfalfa in Wellton area. (Ariz. Coop. Sur.).

PEA APHID (Acyrthosiphon pisum) - MARYLAND - Building up; highest count over 200 per sweep on alfalfa in Thurmont area, Frederick County. (U. Md., Ent. Dept.). OHIO - Light to moderate in alfalfa near McArthur, Vinton County. Nymphs and adults ranged 200-275 per 50 sweeps. (Lyon). WISCONSIN - Increased in many fields where regrowth lush; 20-30 per sweep common. Winged forms becoming common in lower populated fields and general buildup expected. (Wis. Ins. Sur.). NORTH DAKOTA - Populations built up in some southeastern areas; ranged 30-50 per sweep. Moderate numbers of lacewings and lady beetles also present. (N. D. Ins. Sur.). WYOMING - Averaged 550 per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, week ending August 30. Counts per 100 sweeps in alfalfa averaged 600 in Sublette and Uinta Counties and 475 in Carbon and Sweetwater Counties. (Marks). OKLAHOMA - Light populations of 100 per 10 sweeps noted on alfalfa in Major County, northwest. (Okla. Coop. Sur.). NEW MEXICO - Light to moderate in alfalfa in northern San Juan County. (N. M. Coop. Rpt.). ARIZONA - Increases noted in alfalfa in Graham, Pinal and Maricopa Counties; ranged 3,000-4,000 per 100 sweeps. (Ariz. Coop. Sur.). WASHINGTON - Unusually scarce in eastern area alfalfa. (Landis).

SPOTTED ALFALFA APHID (*Therioaphis maculata*) - WISCONSIN - Alates decreased at site of initial infestation in Brodhead area, Green County; numbers decreased by one-third, due possibly to dispersal and/or rains. Few found at location in southern Grant County, several locations in Sauk County, along Wisconsin River in Iowa County, and in at least one field near Mazomanie, western Dane County. Search along Mississippi River as far north as Buffalo County failed to reveal any specimens. (Wis. Ins. Sur.). COLORADO - Populations very high in Prowers, Bent, Otero, Crowley and Pueblo Counties. (Swink, Schweissing). Ranged 50-100 per 100 sweeps in Mesa County; trace numbers noted in Montrose County. (Bulla). OKLAHOMA - Continues light in Major County, northwest; 100 per 10 sweeps. (Okla. Coop. Sur.). NEW MEXICO - Ranged light to moderate in alfalfa in San Juan and Bernalillo Counties. (N. M. Coop. Rpt.).

LYGUS BUGS (*Lygus* spp.) - WYOMING - Averaged 60 adults and 54 nymphs per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, week ending August 30. Averaged 42 adults and 36 nymphs per 100 sweeps in same crop following week in Carbon, Sweetwater, Sublette and Uinta Counties. (Marks). COLORADO - Abundant in Delta County alfalfa. (Bulla). UTAH - Mostly *L. elisus*, very numerous on sunflower and weeds in Weber-Davis County fields; nymphs of various sizes sometimes present in conspicuous numbers. (Knowlton). NEW MEXICO - Nymphs and adults abundant in alfalfa in San Juan and Bernalillo Counties. (N. M. Coop. Rpt.).

ALFALFA PLANT BUG (*Adelphocoris lineolatus*) - WYOMING - Adults averaged 26 per 100 sweeps in Hot Springs and Washakie County alfalfa, week ending August 30; averaged 24 per 100 sweeps in same crop in Carbon, Sweetwater, Sublette and Uinta Counties currently. (Marks). OHIO - Nymphs and adults averaged 12 per 50 sweeps in field of alfalfa at Friendship, Scioto County. (Lyon).

MEADOW SPITTLEBUG (*Philaenus spumarius*) - MARYLAND - Adults ranged 0-2 per sweep in 10 fields of alfalfa checked in Frederick County. (U. Md., Ent. Dept.). OHIO - Very low adult populations noted in southern counties. (Lyon).

POTATO LEAFHOPPER (*Empoasca fabae*) - WISCONSIN - Continues to increase, particularly in area along Mississippi River; as many as 12 nymphs per sweep and yellowing prevalent in many fields. (Wis. Ins. Sur.). MARYLAND - Nymphs and adults caused heavy damage to 9-acre field of alfalfa at Eden, Wicomico County. (U. Md., Ent. Dept.).

THREE-CORNERED ALFALFA HOPPER (*Spissistilus festinus*) - ARIZONA - Ranged 300-800 per 100 sweeps in alfalfa in Yuma, Graham and Maricopa Counties. (Ariz. Coop. Sur.). ARKANSAS - Ranged 0-10 per 30 feet of row in 9 of 13 soybean fields checked in Lonoke County. (Ark. Ins. Sur.).

ALFALFA WEEVIL (*Hypera postica*) - NEW MEXICO - Ranged light to heavy in San Juan County alfalfa. Counts per 100 sweeps as follows: La Plata - 0-8 larvae; Kirtland - 16-35 larvae, 2-8 adults; Farmington - 12 to over 100 larvae. (N. M. Coop. Rpt.). MARYLAND - Larvae ranged 0-5 per sweep in 10 alfalfa fields checked in Frederick County. (U. Md., Ent. Dept.).

BEAN LEAF BEETLE (*Cerotoma trifurcata*) - ALABAMA - Causing considerable leaf damage to soybeans in Limestone, Morgan and Madison Counties. (McQueen). ARKANSAS - Ranged 3-33 per 30 feet of row in 13 fields of soybeans checked in Lonoke County. (Ark. Ins. Sur.). MARYLAND - Adults causing light to moderate damage to soybeans in Wicomico and Worcester Counties. (U. Md., Ent. Dept.).

MARGINED BLISTER BEETLE (*Epicauta pestifera*) - GEORGIA - Moderate to heavy on soybeans in Bryan County. (Freeman).

THRIPS - MARYLAND - Heavy numbers of an undetermined species noted on alfalfa near bloom at Eden, Wicomico County. (U. Md., Ent. Dept.).

SOYBEAN CYST NEMATODE (Heterodera glycines) - TENNESSEE - Collected in Fayette County for the first time. (PPC, South. Reg., July Rpt.).

FRUIT INSECTS

CODLING MOTH (Carpocapsa pomonella) - NEW MEXICO - Apples checked at packing sheds and orchards in San Juan and Lincoln Counties showed 5-85 percent damage; damage especially bad in untreated or improperly treated orchards. (N. M. Coop. Rpt.). UTAH - Untreated apples at Logan, Cache County, sometimes 95 percent "wormy" which was very different from observations made at Coalville, Summit County, where only 5 percent of fruit with larvae. (cf. CEIR 13(35): 1012). (Knowlton). MICHIGAN - Adult flight appears almost over; only 4 specimens taken in Livingston County blacklight trap and only 3 emerged in Kent County cage during week ending September 2. Few new "stings" seen since August 20. Problems in commercial orchards low in southwestern area. (Newman, Gilmore, Tatter).

ORIENTAL FRUIT MOTH (Gropholitha molesta) - MICHIGAN - Larvae causing less damage than during other recent years; Amber Gem peaches from infested research plots in Allegan County showed only 6 larval entries in 1,181 fruits dissected September 4. Larvae of undetermined species, possibly G. prunivora, working under skin of apples in Allegan County research plots. (Pshea).

FALL WEBWORM (Hyphantria cunea) - OHIO - Heavy in several apple orchards in northeastern area. (Forsythe). NEW MEXICO - Problem in spots in pear and other fruit trees in Farmington area, San Juan County. (N. M. Coop. Rpt.).

A PEACH TREE BORER (Synanthedon sp.) - NEW MEXICO - Light to moderate and injuring peach trees in orchards in Bloomfield area, San Juan County. (N. M. Coop. Rpt.).

SHOT-HOLE BORER (Scolytus rugulosus) - NEW MEXICO - Attacking healthy peach trees; where populations are heaviest, considerable damage occurring at Bloomfield, San Juan County. (N. M. Coop. Rpt.).

EUROPEAN RED MITE (Panonychus ulmi) - MARYLAND - Continues troublesome on commercial apples in Hancock area, Washington County. (U. Md., Ent. Dept.). OHIO - Low in treated orchards at Columbus, Franklin County. (Lyon). MICHIGAN - Numbers trending downward in southwestern orchards since August 20. (Tatter, Pshea).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - COLORADO - Continues as principal pest problem in State. Ranged up to 100 per leaf on apples in Mesa County. (Bulla). MICHIGAN - Numbers declining in southwestern orchards since August 27. (Tatter, Pshea).

A SPIDER MITE (Tetranychus mcdanieli) - NEW MEXICO - Damaged foliage of apple trees in most northern counties; some orchards still have heavy infestations. (N. M. Coop. Rpt.).

SAN JOSE SCALE (Aspidiotus perniciosus) - RHODE ISLAND - Heavy on pear in Saunderstown, Washington County; few crawlers noted. (Mathewson, Sheehan).

PEAR-SLUG (Caliroa cerasi) - COLORADO - Active on cherry, plum and pear throughout State. (Hantsbarger). UTAH - Damage to pears and cherries in Davis County moderate. (Rogers, Knowlton).

WOOLLY APPLE APHID (Eriosoma lanigerum) - NEW MEXICO - Caused considerable damage to terminal growth of apple trees in several orchards in San Juan County. Lighter infestations found in most apple orchards in this area. (N. M. Coop. Rpt.).

APPLE MAGGOT (*Rhagoletis pomonella*) - MICHIGAN - Adults common in neglected orchards in Oakland and Macomb Counties; of 25 collected September 4, males numbered 21 and females 4. (Siefert). WISCONSIN - Larvae numerous in apples in Walworth and Kewaunee Counties; few adults continue to be trapped; one specimen collected in Brodhead, Green County, September 30. (Wis. Ins. Sur.).

VINEGAR FLIES (*Drosophila* spp.) - MICHIGAN - Adults abundant in peach and apple packing sheds and causing more problems in southwestern area than during other recent years. (Tatter).

GRAPE LEAFHOPPERS (*Erythroneura* spp.) - OHIO - Nymphs moderate to heavy on grape foliage at home garden in Jackson County. (Lyon).

GRAPE BERRY MOTH (*Paralobesia viteana*) - OHIO - Larvae noted on grape foliage in Jackson County home garden. (Lyon).

A WEEVIL (*Brachyrhinus* sp.) - WASHINGTON - Adults severely notching leaves of blueberries at Montesano, Grays Harbor County. (Telford).

BLACK PECAN APHID (*Melanocallis caryaefoliae*) - ALABAMA - Heaviest infestations in decade on pecans of this species and *Monellia* spp. in Mobile County; also damaging in some orchards in Tallapoosa County. (Deakle, Robinson, Seibels, Burton).

HICKORY SHUCKWORM (*Laspeyresia caryana*) - ALABAMA - Light on pecans in Limestone, Madison, Marshall and Cherokee Counties; heavy on nuts of hickory trees. (McQueen).

SADDLEBACK CATERPILLAR (*Sibine stimulea*) - ALABAMA - Few larvae noted on pecans in Limestone County. (McQueen).

PECAN WEEVIL (*Curculio caryae*) - OKLAHOMA - Heavy emergence reported in Jefferson County (south central). (Okla. Coop. Sur.).

MEDITERRANEAN FRUIT FLY (*Ceratitis capitata*) - FLORIDA - One adult female collected in Steiner trap in guava at Village of El Portel, Dade County. (Hollenberger, Aug. 28).

CITRUS THRIPS (*Scirtothrips citri*) - ARIZONA - Moderate damage still found on terminal growth of young citrus trees in Yuma County. (Ariz. Coop. Sur.).

CAMPHOR SCALE (*Pseudaonida duplex*) - FLORIDA - Collected on sweet orange at Deland, Volusia County. (Roberts, Aug. 29).

CITRUS BLACKFLY (*Aleurocanthus woglumi*) - MEXICO - *Chemical Control Zone* - Total of 88,418 citrus trees inspected on 878 properties in States of Nuevo Leon and Sonora; results negative. (PPC, Mex. Reg., July Rpt.).

CITRUS RED MITE (*Panonychus citri*) - CALIFORNIA - Light on citrus nursery stock in Woodland, Yolo County. (Cal. Coop. Rpt.).

CITRUS FLAT MITE (*Brevipalpus lewisi*) - ARIZONA - Buildups occurring on tangerines in Yuma County; ranged 8-10 per fruit. (Ariz. Coop. Sur.).

Citrus Insect Situation in Florida - End of August - On leaves, CITRUS RUST MITE (*Phyllocoptruta oleivora*) infested 69 percent of groves (norm 59 percent); 48 percent economic (norm 38 percent). On fruit, CITRUS RUST MITE infested 68 percent of groves (norm 68 percent); 46 percent economic (norm 48 percent). Despite decrease past month, population above average and at high level. Little further decrease expected in cold-damaged groves. Undamaged groves will show greater decrease, but injurious infestations will be present in about 30 percent of such groves. Highest districts upper east coast, Gainesville, Bartow, Orlando, west coast and Brooksville. CITRUS RED MITE (*Panonychus citri*) infested 53 percent of groves (norm 39 percent); 21 percent economic (norm 20 percent). Although population decreased and is at moderate level, scattered groves, especially cold-damaged groves, may harbor heavy infestations. Highest districts upper east coast and Orlando. TEXAS CITRUS MITE (Eutetranychus banksi) infested 39 percent of groves (norm 20 percent); 18 percent economic (norm 7 percent). Population dropped to moderate level, but is above average for time of year and higher in cold-defoliated groves. Further decrease expected. Highest districts Gainesville and Orlando. PURPLE SCALE (Lepidosaphes beckii) infested 59 percent of groves (norm 60 percent); 8 percent economic (norm 3 percent). Little change expected for current average level. All districts low and most infestations light. GLOVER SCALE (L. gloverii) infested 49 percent of groves (norm 18 percent); 17 percent economic (norm 1 percent). Population will continue above average and with little change. CHAFF SCALE (Parlatoria pergandii) infested 52 percent of groves (norm 26 percent); 13 percent economic (norm 1 percent). Population continued above average and will increase. YELLOW SCALE (Aonidiella citrina) infested 29 percent of groves (norm 9 percent); 2 percent economic (norm 1 percent). Population continued above normal. Infestations will become heavier. BLACK SCALE (Saissetia oleae) infested 39 percent of groves (norm 38 percent); 22 percent economic (norm 18 percent). Population slightly above average and at moderate level. Gradual decrease expected. FLORIDA RED SCALE (Chrysomphalus aonidum) present as light infestations in a few warm-location groves. WHITEFLIES are near normal, moderate level; population increasing gradually. Where mites are increasing in cold-damaged groves, further increase is likely unless control measures are taken at this time. In most undamaged groves, high mite infestations are expected to decrease and fall mite spray can be delayed. (W. A. Simanton (Citrus Expt. Sta., Lake Alfred)).

TRUCK CROP INSECTS

POTATO APHID (Macrosiphum euphorbiae) - OHIO - Red form heavy on tomatoes in Jackson County; caused severe damage. (Lyon). COLORADO - Light to medium in some potato fields in Costilla, Conejos, Alamosa, Rio Grande and Saguache Counties; ranged 0-100 per leaf. (Jenkins). UTAH - Generally light this season in fields examined. (Knowlton).

POTATO PSYLLID (Paratrioza cockerelli) - WYOMING - Adult counts per 100 sweeps in potato fields averaged 1 in Fremont and Washakie Counties and 2 in Hot Springs County. (Marks, Aug. 30).

TOMATO FRUITWORM (Heliothis zea) - UTAH - Occurrence in northern canning areas very light. (Knowlton).

POTATO TUBERWORM (Gnorimoschema operculella) - MICHIGAN - Larvae causing injury to exposed tubers in infested potato fields in Monroe County. (Guyer).

A SCARAB (Aphodius distinctus) - WASHINGTON - Larvae and pupae in harvested potato field at Basin City, Grant County; damage to potatoes not apparent. (Onsager).

GREAT BASIN WIREWORM (Ctenicera pruninia) - WASHINGTON - Larvae causing 30 percent damage to potato tubers at Basin City, Grant County, and Mesa, Franklin County. (Onsanger).

COLORADO POTATO BEETLE (Leptinotarsa decemlineata) - COLORADO - Noticeable numbers continue damage in treated fields in Weld and Larimer Counties. (Berry).

BLACK BLISTER BEETLE (Epicauta pennsylvanica) - OHIO - Groups of 40-50 adults feeding on potatoes at South Bloomfield, Pickaway County. (Richards).

BEET LEAFHOPPER (Circulifer tenellus) - NEW MEXICO - Populations were high in most tomato-growing areas of State; curly top virus an important factor in reducing yields in Valencia, San Juan, Rio Arriba, Dona Ana and Luna Counties. (N. M. Coop. Rpt.).

BEET WEBWORM (Loxostege sticticalis) - WYOMING - Averaged 1 larva per 100 sugar beet plants in Fremont, Hot Springs and Washakie Counties. (Marks, Aug. 30).

GARDEN WEBWORM (Loxostege similalis) - ARIZONA - Larvae damaging fields of table beets in Yuma County; controls underway in most fields. (Ariz. Coop. Sur.).

A PYRAUSTID MOTH (Udea profundalis) - CALIFORNIA - Larvae heavy on sugar beets in Fresno, Fresno County. (Cal. Coop. Rpt.).

AN EPHYRID FLY (Psilopa leucostoma) - WASHINGTON - Rare species mining sugar beet leaves at Walla Walla, Walla Walla County; larvae collected July 8 and reared to adults July 29. Det. by M. T. James. (Landis).

MEXICAN BEAN BEETLE (Epilachna varivestis) - OHIO - Severe feeding damage observed on most garden beans throughout southern area; new adults emerging in Lawrence County. (Lyon). COLORADO - Causing damage in several gardens in vicinity of Fort Collins, Larimer County. (Hantsbarger).

COWPEA CURCULIO (Chalcodermus aeneus) - ALABAMA - Few adults noted on southern peas in Autauga, Lee and Elmore Counties. (McQueen).

IMPORTED CABBAGEWORM (Pieris rapae) - MARYLAND - Larvae extremely destructive to garden cabbage at Powellville, Wicomico County. (U. Md., Ent. Dept.).

CABBAGE APHID (Brevicoryne brassicae) - DELAWARE - Building up on cole crops in Kent County. (Bray). UTAH - Infestations about normal in Salt Lake and Weber Counties in home gardens. (Knowlton).

SQUASH BEETLE (Epilachna borealis) - RHODE ISLAND - Adults continue numerous on squash in Peace Dale, Washington County, gardens. (Mathewson).

A LEAFHOPPER (Empoasca filamenta) - UTAH - Damage below normal this season on squash. (Knowlton).

SQUASH BUG (Anasa tristis) - RHODE ISLAND - Not seen nor reported again this year. (Mathewson).

ASPARAGUS BEETLE (Crioceris asparagi) - CALIFORNIA - Adults heavy on asparagus planting in Modesto, Stanislaus County. (Cal. Coop. Rpt.).

A SUBTERRANEAN TERMITE (Reticulitermes sp.) - CALIFORNIA - Heavy in rhubarb plants locally in Riverside, Riverside County. (Cal. Coop. Rpt.).

A FLEA BEETLE - MICHIGAN - Undetermined species heavy in Branch County mint field. (Durren).

WEEVILS (Brachyrhinus spp.) - UTAH - Caused conspicuous damage to a few strawberry fields in Davis County. (Rogers, Knowlton).

POTATO LEAFHOPPER (Empoasca fabae) - NORTH DAKOTA - Remains abundant on potatoes in Grand Forks area, Grand Forks County. Counts ranged 20-25 per sweep. (N. D. Ins. Sur.). MARYLAND - Heavier than usual on snap and lima beans on Eastern Shore. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - COLORADO - Buildup continuing on late potatoes in areas of Weld County; generally light to moderate. (Simpson). WASHINGTON - Apterae and alatae unusually scarce on potatoes and sugar beets in eastern area. (Landis).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Numerous in some gardens in Salt Lake City. (Knowlton).

TWO-SPOTTED SPIDER MITE (Tetranychus telarius) - WASHINGTON - Populations diminishing on potatoes but increasing slightly on sugar beets in eastern area. (Landis).

TOBACCO INSECTS

TOBACCO FLEA BEETLE (Epitrix hirtipennis) - MARYLAND - Several moderate to heavy infestations occurring on tobacco in Anne Arundel and St. Marys Counties. (U. Md., Ent. Dept.).

A FLEA BEETLE - OHIO - Undetermined species ranged 8-10 adults per lower tobacco leaf at Friendship, Scioto County; caused moderate economic damage. (Lyon).

HORNWORMS (Portoparce spp.) - MARYLAND - Generally light on tobacco in Anne Arundel and St. Marys Counties; few eggs noted on tobacco at Hollywood, St. Marys County. (U. Md., Ent. Dept.).

TOBACCO BUDWORM (Heliothis virescens) - MARYLAND - Highest infestation recorded on tobacco in St. Marys County was 2 percent. (U. Md., Ent. Dept.).

GREEN PEACH APHID (Myzus persicae) - MARYLAND - Several light to moderate infestations on 20-34 percent of plants on tobacco in St. Marys County. (U. Md., Ent. Dept.).

SUCKFLY (Cyrtopeltis notatus) - VIRGINIA - Severe on tobacco on farm in Farmville, Prince Edward County. (Rowell, Peery, Aug. 29).

COTTON NOTES FROM ARIZONA

Considerable damage from LYGUS BUG (Lygus spp.) still being found, particularly on late developing top bolls. Counts remain same as previous week except in Yuma County where reductions found. COTTON APHID (Aphis gossypii) populations increasing in Yuma and Graham Counties; appearing on terminal growth. Increases of SALT-MARSH CATERPILLAR (Estigmene acrea) noted in Yuma and Pinal Counties; some controls applied in Yuma County. Few larvae of COTTON LEAFWORM (Alabama argillacea) found in Stanfield area of Pinal County. BEET ARMYWORM (Spodoptera exigua) infestations increased in Pinal and Maricopa Counties; ranged 16-20 per 100 plants. A STINK BUG (Euschistus impictiventris) ranged light to moderate in Pinal, Maricopa and Graham Counties. (Ariz. Coop. Sur.).

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Weather of the week ending September 9 (Continued from page 1072)
from the Pacific Ocean to the Rocky Mountains, and much of the country east of the Rockies received less than 0.50 inch of rain during the week. Showers produced more than an inch at a few isolated locations, mostly scattered from the Great Lakes to the gulf, in Florida, and along the middle and northern Atlantic coast. Temperatures averaged above normal over most of the Nation from the Pacific to the Mississippi River. The main exceptions were over Arizona and nearby parts of adjoining States and small areas in Nebraska and Iowa. Temperatures averaged below normal over the northern prairie, the Ohio River Valley, and from Georgia northeastward to New England. Temperature departures ranged from -6° in the Norfolk, Virginia, vicinity to +10° at Havre and Glasgow, Montana. (Summary supplied by U.S. Weather Bureau).

COTTON INSECTS

BOLL WEEVIL (Anthonomus grandis) - NORTH CAROLINA - Punctured all squares examined in a Harnett County field on August 30. (Vinson). SOUTH CAROLINA - Young bolls still require protection from numerous weevils in fields in Florence area to make full potential crop; however, weevil numbers remain low in adequately protected fields. (Taft et al.). GEORGIA - Square counts in 15 northwest area cotton fields ranged 7-75 percent punctured squares; average 43 percent. (Johnson). ALABAMA - Although of no immediate concern to cotton growers in central and southern areas, weevils numerous. Recent "hatch outs" in some northern counties, especially Fayette, Marion, Lawrence and others caused considerable damage to half and three-quarter grown bolls; 1-6 bolls per stalk noted damaged in some fields. Dry weather caused squares and small bolls to shed; weevils used larger bolls for food and egg laying. Controls ended in practically all cotton-producing areas as harvest underway in most counties. (McQueen et al.). MISSISSIPPI - Light to heavy in delta counties and in Attala, Choctaw, Copiah, Lowndes, Monroe and Montgomery Counties on cotton. Controls applied. (Ouzts). OKLAHOMA - Continues generally light in west central and southwest areas; check in nonirrigated field showed 80 percent infestation. Ranged 0-6 percent in Bryan County (south central). (Okla. Coop. Sur.).

BOLLWORMS (Heliothis spp., et al.) - SOUTH CAROLINA - Numbers on decline although some fields of younger cotton heavily infested with large, difficult-to-kill larvae in Florence area. (Taft et al.). GEORGIA - Egg counts in 15 northwest area cotton fields ranged 0-21 per 100 terminals or plants; average 15. Larvae ranged 0-42 per 100 terminals or plants; average 9. Infestations have been more severe this season than in past several years. (Johnson). ALABAMA - Continue a problem in young and late cotton throughout most of northern part of State. Unusually large numbers of eggs and small larvae in most fields. H. zea adults common in all fields. (McQueen et al.). MISSISSIPPI - H. zea and H. virescens range light to heavy on cotton in Attala, Choctaw, Copiah, Monroe, Montgomery and Prentiss Counties and in delta counties. Controls applied. H. virescens a problem in isolated areas from Coahoma County to Issaquena County. (Ouzts). ARKANSAS - Determination of larvae collected from cotton during first half of August were 137 H. zea, 7 H. virescens; 4.2 percent were H. virescens. (Ark. Ins. Sur.). OKLAHOMA - Light in Beckham County (west central) and in Jackson and Greer Counties (southwest). Infestation ranged 8-30 percent in Bryan County (south central), with medium counts reported in McCurtain County (southeast). (Okla. Coop. Sur.). CALIFORNIA - H. zea increasing in Fresno County, except far westside area where few fields above economic level. Counts per 100 plants, in other areas, as follows: Clovis, 10; Tranquillity-San Joaquin, 4-15, with much treatment underway; Fowler, 3-7; Reedley, 4. (Ferris). Generally light in Kern County for time of year. Localized problems where counts of 6-8 small larvae per 100 plants can be found. (Black).

CABBAGE LOOPER (Trichoplusia ni) - ARKANSAS - Egg deposition continues heavy on cotton in upper Arkansas River Valley. (Ark. Ins. Sur.). MISSISSIPPI - Light on cotton in delta counties; controls applied. (Ouzts).

COTTON LEAFWORM (Alabama argillacea) - OKLAHOMA - Medium population of 10 per plant noted on cotton in Major County, northwest. (Okla. Coop. Sur.). NEW MEXICO - Adults and larvae noted in several Dona Ana County cotton fields. In pupal stage in most fields in Roosevelt County. (N. M. Coop. Rpt.).

BEET ARMYWORM (Spodoptera exigua) - GEORGIA - Light on cotton in Pike, Meriwether and Polk Counties. (Johnson).

EUROPEAN CORN BORER (Ostrinia nubilalis) - ARKANSAS - Single specimen collected from white cotton bloom in Pope County (west central), September 4. (Ark. Ins. Sur.).

A LEAF ROLLER MOTH (Platynota stultana) - CALIFORNIA - Infestations common in cotton adjacent to or near rose nurseries in Kern County; square and boll feeding evident. Severe infestation may cause early defoliation and boll damage. (Leigh).

LYGUS BUGS (Lygus spp.) - CALIFORNIA - Populations at or near treatment level in many areas of Fresno County. In Clovis area, counts increased rapidly; nymphs and adults present. (Ferris). Counts not extremely high in Kern County, but adults and nymphs present in sufficient numbers to warrant control in some fields. Such populations can be damaging to small bolls and squares, particularly in late maturing fields. (Black, Leigh).

APHIDS - CALIFORNIA - Infestations spotty in some fields in Reedley area, Fresno County. (Ferris). Evident throughout Kern County; as bolls are opening, growers and field checkers should be particularly alert for these pests. (Leigh).

A THRIPS (Leucothrips piercei) - CALIFORNIA - Nymphs and adults medium on cotton in El Centro, Imperial County. (Cal. Coop. Rpt.).

WHITEFLIES - ALABAMA - Adults and nymphs extremely heavy; 30-60 per leaf on some older cotton in Limestone and Madison Counties. (McQueen et al.).

SPIDER MITES - CALIFORNIA - Populations heavy in Clovis area, Fresno County, where problem worse than in 1962; some treatment underway in San Joaquin-Tranquillity area. (Ferris). Infestations continue to appear in tops of plants in Kern County; however, development slowed by cool nights, and severity of problem becoming questionable. (Black). Evident in Kern, Kings and Fresno County areas. With exception of very severe infestations of Tetranychus atlanticus, doubtful that controls at this time will result in increased yield or quality. (Leigh). MISSISSIPPI - Isolated infestations of Tetranychus spp. range light to heavy in Prentiss County and in delta counties; controls applied. (Ouzts). ALABAMA - Seriously damaged cotton at Sand Mountain and the Tennessee Valley during past 15-20 days; many fields 10-80 percent defoliated, most prematurly. Some fields noted with 2-10 young bolls per stalk in damaged fields that will not open properly, or not at all. (McQueen et al.). GEORGIA - Light to moderate on cotton in 15 northwest area cotton fields. (Johnson).

FOREST, ORNAMENTAL AND SHADE TREE INSECTS

NANTUCKET PINE TIP MOTH (Rhyacionia frustrana) - ALABAMA - Heavy damage to isolated and small groups of loblolly and short leaf pine especially on lawns and small volunteer groups in Marion, Lawrence, Marshall and Cherokee Counties. (Parris et al.). OKLAHOMA - Moth emergence marking beginning of fourth generation in Stillwater area. (Okla. Coop. Sur.).

FALL WEBWORM (Hyphantria cunea) - NEW MEXICO - Light to moderately heavy populations defoliating poplar and other shade trees in San Juan County. Populations much heavier in Rio Arriba County on poplars along Rio Grande and streams. (N. M. Coop. Rpt.). ALABAMA - Very few infestations in central area. Most noticeable infestation on pecans in Limestone County. Few persimmon and sweetgums affected. (McQueen).

AMERICAN DAGGER MOTH (Acronicta americana) - NEVADA - Generally light to medium, with larvae heavy on some boxelders in Reno-Sparks area, Washoe County. Entire trees defoliated in some instances. Many persons suffered severe rash after handling larvae. (Coop. Rpt.).

YELLOW-NECKED CATERPILLAR (Datana ministra) - NORTH CAROLINA - Larvae feeding on willow oak in Wayne County. (Lamm, Robertson).

GYPSY MOTH (Porthetria dispar) - MICHIGAN - Trapping completed for 1963 with no males being collected. This is second consecutive year no adults taken in State. Intensive trapping for 1-2 more years necessary to determine if species erradicated from State. (Ring). OKLAHOMA - Traps checked in 15 central and eastern counties with negative results. (Okla. Coop. Sur.).

SILVER-SPOTTED SKIPPER (Epargyreus clarus) - ALABAMA - Numerous larvae feeding on black locust throughout State. (McQueen).

ELM LEAF BEETLE (Galerucella xanthomelaena) - ARIZONA - Caused heavy damage to foliage of Chinese elms in Graham County. (Ariz. Coop. Sur.). NEW MEXICO - Heavy and defoliating elms near Glenwood, Catron County. (N. M. Coop. Rpt.). COLORADO - Damaging elms in Fremont County. (Hantsbarger). OKLAHOMA - Damage continues throughout State. Heavy numbers of Chrysopa sp. eggs (1.5 per leaf) on elms in Stillwater area. (Okla. Coop. Sur.). ALABAMA - Continues to defoliate trees throughout northern area. Controls applied. (McQueen).

LOCUST LEAF MINER (Xenochalepus dorsalis) - ALABAMA - Common on black locust throughout northern area. (McQueen).

LARGER ELM LEAF BEETLE (Monocesta coryli) - ALABAMA - Defoliating American elms in lowland areas of Lee County in vicinity of Opelika. (McQueen).

LOCUST BORER (Megacyllene robiniae) - ALABAMA - Quite heavy in many stands of black locust in Marion, Lawrence, Limestone, Morgan, Madison and Marshall Counties. Few adults taken. (McQueen).

OAK LACE BUG (Corythucha arcuata) - NORTH DAKOTA - Caused moderate to heavy damage to burr oak foliage in Kindred area, Cass County. (N. D. Ins. Sur.).

LEAFHOPPERS - OKLAHOMA - Caused heavy damage to elms and redbud trees in Stillwater area. (Okla. Coop. Sur.).

BAGWORM (Thyridopteryx ephemeraeformis) - MARYLAND - Heavy injury to ornamental arborvitae at locations in Prince Georges and Worcester Counties. (U. Md., Ent. Dept.). ALABAMA - Continues to damage arborvitae, redcedar, black locust, hackberry and many other shrubs and trees throughout northern counties. (Parris et al.).

MIMOSA WEBWORM (Homadaula albizziae) - OHIO - Populations building up on honeylocust in central and southwestern areas. Leaf webbing severe on wild honeylocust in Morrow County. (Lyon). NORTH CAROLINA - Caused browning of honeylocust locally in Wake County. (Mount). ALABAMA - New and overlapping generations on mimosa throughout northern area. Many trees completely defoliated, presenting unsightly appearance. Heavy in Mobile County area. (Seibels et al.).

WHITE-LINED SPHINX (Celerio lineata) - ARIZONA - Larvae numerous and causing problems to homeowners in Pima, Pinal, Maricopa and Yuma Counties. (Ariz. Coop. Sur.).

APHIDS - CALIFORNIA - Cinara curvipes heavy on deodar cedar locally in Santa Cruz, Santa Cruz County. Aphis nerii heavy on oleander nursery stock in Concord, Contra Costa County. (Cal. Coop. Rpt.). WISCONSIN - Lachnus salignus populations abundant locally in Dane County. Numbers apparently less than last year. (Wis. Ins. Sur.). NEW JERSEY - Various species on many ornamentals and shade trees. (Ins.-Dis. Newsltr., Sept. 3).

SPRUCE APHID (Aphis abietina) - CALIFORNIA - Heavy population on Picea sp. in Golden Gate Park, San Francisco. (Cal. Coop. Rpt.).

PHLOX PLANT BUG (*Lopidea davisi*) - OHIO - Moderate to heavy damage on phlox plants in Jackson County; nymphs and adults present. Averaged 15-20 bugs per plant. (Davidson, Lyon).

A SUBTERRANEAN TERMITE (*Reticulitermes* sp.) - CALIFORNIA - Heavy in Mexican sedum plants in St. Helena, Napa County. (Cal. Coop. Rpt.).

SPIDER MITES - WYOMING - *Tetranychus* sp. building up in Pinedale area, Sublette County, on evergreens near homes. Discolored foliage noted in some instances. (Marks). NORTH DAKOTA - *Tetranychus telarius* damaged spruce and arborvitae in nursery and yard plantings in southeast; continues to feed. (N. D. Ins. Sur.). OKLAHOMA - *Panonychus ulmi* damaged elms repeatedly treated. (Okla. Coop. Sur.).

COCCIDS - NEW JERSEY - *Toumeyella liriodendri* and *Neolecanium cornuparvum* crawlers active. (Ins.-Dis. Newsltr., Sept. 3). CALIFORNIA - *T. liriodendri* currently under eradication on tuliptrees in San Jose, but an unusual occurrence of a heavy infestation found on *Magnolia soulangeana* in San Jose, Santa Clara County. (Cal. Coop. Rpt.).

Coccids in Florida - *Ceroplastes cirripediformis* moderate on *Gardenia jasminoides* at Pembroke, Polk County (McLeod, Nelson, Aug. 15). *Ceroplastes floridensis* and *Chrysomphalus dictyospermi* moderate on *Ilex* sp. at Cocoa, Brevard County. (Levin, Aug. 23). *Chrysomphalus aonidum* heavy on *Ficus pandurata* at Apopka, Orange County. (Musgrove, Aug. 14). *Phenacaspis cockerelli* moderate on *Archontophoenix alexandrae* at Bradenton, Manatee County (Bickner, Aug. 21) and severe on *Michelia fuscata* at Fairvilla, Orange County (Griffith, Aug. 28). *Pseudaulacaspis pentagona* severe on *Carya* sp. at Daytona Beach, Volusia County. (Pott, Aug. 29). *Pulvinaria psidii* moderate on *Ixora coccinea* at Brandenton, Manatee County. (Bickner Aug. 21). *Saissetia oleae* moderate on *Gardenia jasminoides* at Pembroke, Polk County. (Nelson, Barber, McLeod, Aug. 15). *Toumeyella parvicornis* severe on *Pinus* sp. at Daytona Beach. (Holley, Pott, Aug. 29).

BULB MITE (*Rhizoglyphus echinopus*) - CALIFORNIA - Heavy on gladiolus in San Carlos, San Mateo County. (Cal. Coop. Rpt.).

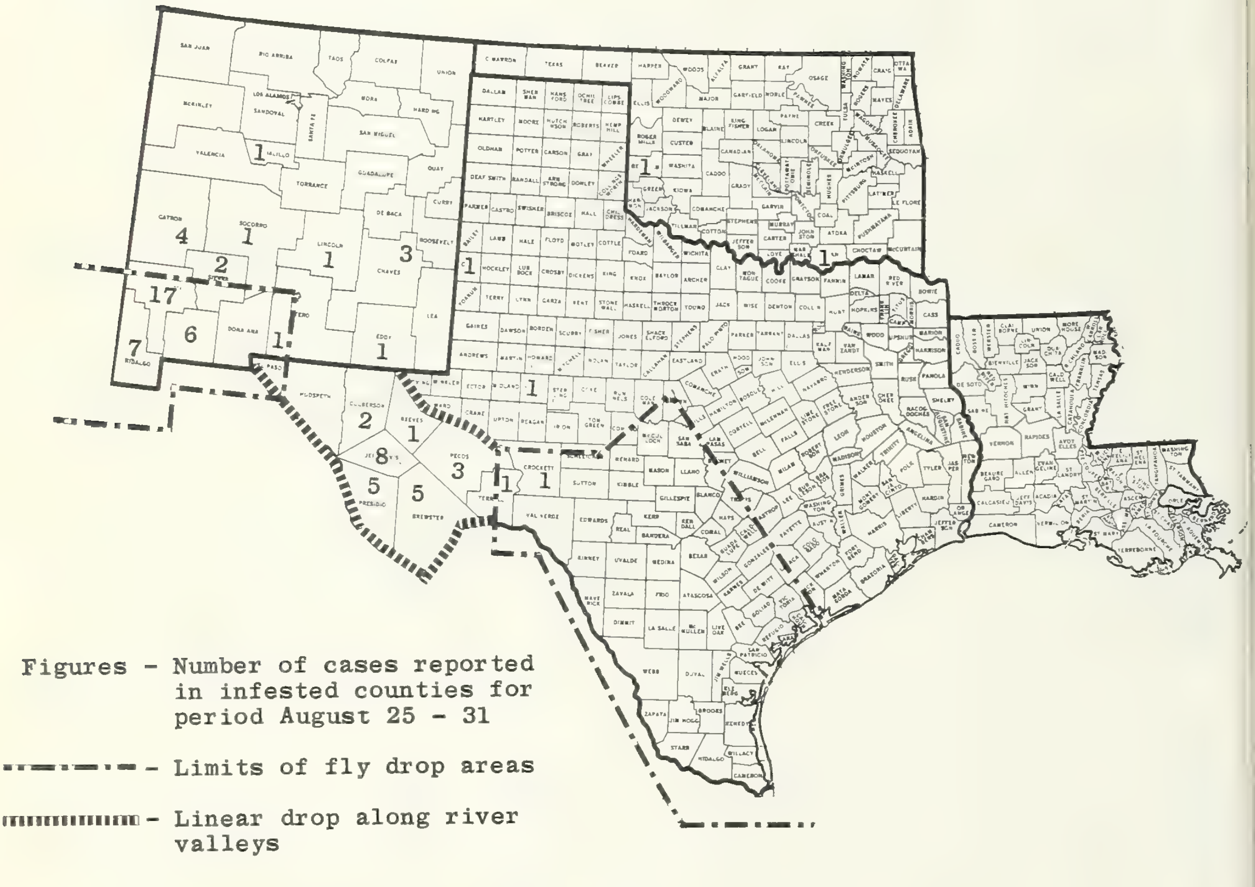
ERIOPHYID MITES - CALIFORNIA - Heavy populations of *Aceria parapopuli* on quaking aspen trees in Lake Mary, Mono County. (Cal. Coop. Rpt.). WISCONSIN - *Nalepella* sp. prevalent on seedling white and black spruce in central and northern counties. (Wis. Ins. Sur.).

INSECTS AFFECTING MAN AND ANIMALS

HORN FLY (*Haematobia irritans*) - WYOMING - Adults remain source of annoyance to livestock in Fremont, Hot Springs and Washakie Counties. Populations estimated at 175 per animal. (Marks, Aug. 30). UTAH - Causing considerable annoyance to several cattle herds in Plain City-Roy area, Weber County. (Knowlton). Numerous to very numerous on cattle along Wasatch Front, from Syracuse through Tremonton, northern area. (Knowlton, Hanson). OKLAHOMA - Populations up somewhat in Stillwater area with counts of 500 per head on cows. In Kay County, counts of 1,500-2,000 per head and some with 3,000 per head. (Okla. Coop. Sur.). MISSISSIPPI - Medium to heavy on livestock in delta counties. Control applied. (Ouzts). MICHIGAN - Continues as a pest in Sanilac County. (Sowerby). MARYLAND - Counts of 0-10 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.).

STATUS OF THE SCREW-WORM (*Cochliomyia hominivorax*) IN THE SOUTHWEST

During the period August 25 - 31, a total of 28 confirmed cases was reported from TEXAS; 44 from NEW MEXICO; and 1 from OKLAHOMA. Specimens were reported from 10 counties in Texas, 11 counties in New Mexico and 1 county in Oklahoma. A total of 101,511,450 sterile flies was released in Texas, 8,778,000 in New Mexico and 800,000 in Oklahoma during the period August 25 - 31. (Anim. Dis. Erad. Div.).


Figures - Number of cases reported in infested counties for period August 25 - 31
- Limits of fly drop areas
- Linear drop along river valleys

STABLE FLY (*Stomoxys calcitrans*) - WYOMING - Continues active and bothersome to livestock herds in Fremont, Hot Springs and Washakie Counties. Estimated counts ranged 35-40 per animal week ending August 30. Adults averaged 12-14 per animal in Sublette County. (Marks). UTAH - Troublesome about several dairy farms at Hooper, Ogden and Willard in Weber and Box Elder Counties. (Knowlton, Hanson). OKLAHOMA - Counts of less than 1 per head on animals in Stillwater area. (Okla. Coop. Sur.). MISSISSIPPI - Light on livestock in delta areas. Control applied. (Ouzts). MICHIGAN - Continues as a pest in Sanilac County. (Sowerby). MARYLAND - Counts of 4-15 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.).

FACE FLY (Musca autumnalis) - MARYLAND - Counts ranged 3-75 per head in 4 dairy herds in Frederick County. (U. Md., Ent. Dept.). MICHIGAN - Continues as pest in Sanilac County. (Sowerby).

HOUSE FLY (Musca domestica) - OKLAHOMA - Populations up somewhat from previous week's counts in Stillwater area. (Okla. Coop. Sur.). OHIO - Many residents of Wayne County complained of population buildup. (Lyon). MICHIGAN - Continues as a pest in Sanilac County. (Sowerby).

HORSE BOT FLY (Gasterophilus intestinalis) - UTAH - Continues annoying to some horses in Plain City-Hooper area, Weber County. (Knowlton).

SHEEP BOT FLY (Oestrus ovis) - DELAWARE - Adults emerging in laboratory from pupae and larvae collected August 29 and 30, 1963, at Newark, New Castle County. This is a new State record. (MacCreary).

TABANIDS - UTAH - Tabanus punctifer and other species seriously annoying horses and cattle in Brigham City, Hooper, Syracuse areas. Annoyance most severe at Syracuse. (Knowlton, Hanson). MISSISSIPPI - Tabanus spp. light on livestock in delta counties. Control applied. (Ouzts).

MOSQUITOES - UTAH - Annoyance moderate in Davis County recently but severe in few local areas. (Rogers, Knowlton). Largely Aedes dorsalis annoying in Syracuse-Hooper fields, Davis-Weber Counties. (Hanson, Knowlton). MISSISSIPPI - Psorophora spp. light on livestock in delta counties. (Ouzts). NORTH CAROLINA - Mosquito complaints few in number recently. Two complaints came from Thomasville-Lexington area and another from Waynesville. (Ashton).

WOOL MAGGOTS - OHIO - Unidentified species in several sheep flocks in central area. One flock in Morrow County with 2 infested ewes and 3 infested lambs. Maggots abundant on one ewe near tailhead and up back. Larvae feeding on flesh and blood. (Lyon).

FLEAS (Ctenocephalides spp.) - OKLAHOMA - C. canis and C. felis collected near Cincinnati, Hamilton County. (Rowe, Holdsworth). MARYLAND - Adults of C. felis heavy locally in Andora, Cecil County. (U. Md., Ent. Dept.).

WASPS - RHODE ISLAND - Statewide complaints of Vespula spp. and Polistes spp. normal for season. (Mathewson, Cartier, King, Hannah).

PUSS CATERPILLAR (Megalopyge opercularis) - OKLAHOMA - Continues to cause considerable concern in Oklahoma City area. (Okla. Coop. Sur.).

HOUSEHOLD AND STRUCTURAL INSECTS

CRICKETS - NORTH DAKOTA - Gryllus spp. adults and nymphs continue a problem in and around homes in outlying residential areas in southeastern area. (N. D. Ins. Sur.). WISCONSIN - Crickets, probably Acheta domesticus, troublesome in houses in Walworth and Burnett Counties. (Wis. Ins. Sur.). MICHIGAN - Field crickets in many counties. (Sowerby). MARYLAND - Undetermined species causing a nuisance in homes in several localities over State. (U. Md., Ent. Dept.).

A NONSUBTERRANEAN TERMITE (Incisitermes minor) - OHIO - Collected from a wooden ceiling at Wright-Patterson Air Force Base, near Fairborn, Greene County, June 18, 1963. This is a new State record. Det. T. E. Snyder. (Adams).

EUROPEAN EARWIG (Forficula auricularia) - UTAH - Entering homes in Salt Lake City area, Salt Lake County. (Knowlton).

BOXELDER BUG (Leptocoris trivittatus) - DELAWARE - Very annoying in and around homes in several areas of New Castle County. (Burbutis).

COCKROACHES - UTAH - A number of homes at Bountiful, Davis County, infested. Species usually *Blatta orientalis*. (Knowlton, Rogers).

STORED-PRODUCT INSECTS

CIGARETTE BEETLE (*Lasioderma serricorne*) - FLORIDA - This species and *Oryzaephilus surinamensis* infested corn meal and popcorn at Macclenny, Baker County, August 28. (Collins).

INDIAN-MEAL MOTH (*Plodia interpunctella*) - NEBRASKA - Damaging milo in bin in Seward County. (Bergman).

BENEFICIAL INSECTS

LADY BEETLES - WYOMING - Adults of several species numerous in alfalfa in Fremont, Hot Springs and Washakie Counties; averaged 46 per 100 sweeps, August 30. Adults averaged 44 per 100 sweeps in same crop in Carbon, Sweetwater, Sublette and Uinta Counties, September 3. (Marks). MICHIGAN - Larvae and pupae of unspecified species abundant where aphids present in Shiawassee County. (Search).

DAMSEL BUGS (*Nabis* spp.) - WYOMING - Averaged 42 adults per 100 sweeps in alfalfa in Fremont, Hot Springs and Washakie Counties, August 30. Averaged 56 per 100 sweeps in Carbon, Sweetwater, Sublette and Uinta Counties, September 6; increasing in alfalfa in southern areas. (Marks). MARYLAND - Adults common in alfalfa and soybeans in Wicomico County. (U. Md., Ent. Dept.).

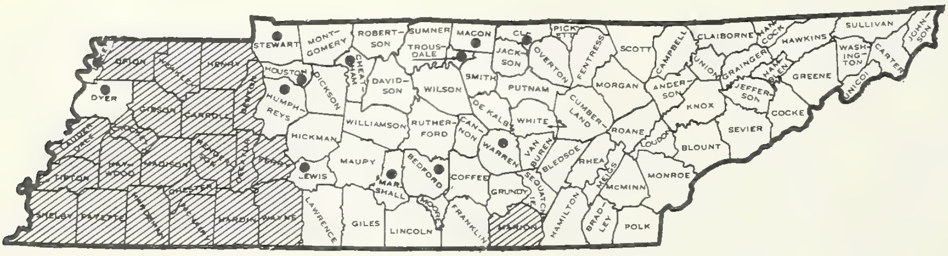
BIG-EYED BUGS (*Geocoris* spp.) - WYOMING - Adults averaged 28 per 100 sweeps in Sublette and Uinta County alfalfa fields. (Marks).

A FLOWER BUG (*Orius* sp.) - MARYLAND - Nymphs common in soybeans in Wicomico and Worcester Counties. May be important in checking numbers of corn earworm eggs. (U. Md., Ent. Dept.).

LACEWINGS - RHODE ISLAND - Numerous about lights at night. (Mathewson).

MISCELLANEOUS INSECTS

Occurrence of Periodical Cicadas in Tennessee - 1963



Degree of Infestation
▨ General
● Spotted

JAPANESE BEETLE (Popillia japonica) - RHODE ISLAND - Rapidly dwindling generally, although occasional observations of apparent new concentrations on isolated favorite food plants noted. (Mathewson, King, Peabody, Howard). OHIO - Females still laying eggs in laboratory tests; many early instars present. (Davidson). MICHIGAN - Some adults continue to be recovered from traps in Battle Creek area; in other areas of State trap collections low with only one per trap pattern when new finds made. In Ypsilanti area, 18 single collections made during week. In Metropolitan Detroit, 25 single collections made. In rural Monroe County, few single catches made in localities outside of area treated in 1962. Very few collections made in area treated in 1962. Traps in Lansing, Flint, Grand Rapids and rural Berrien County negative during week. (Ring). OKLAHOMA - All traps in central and eastern counties inspected; results negative. (Okla. Coop. Sur.). NEW MEXICO - Traps operated in areas of heavy traffic at Albuquerque, Roswell, and Las Cruces yielded no specimens. (N. M. Coop. Rpt.).

WHITE-FRINGED BEETLES (Graphognathus spp.) - Found for the first time in Leon County, FLORIDA. Inspections in GEORGIA revealed new infestations in several known infested counties and extensions of infestations. New county records for Georgia include Chattahoochee, Early, Lowndes and Warren. Reinfestation found in Evans County, Georgia, which was believed free of infestations. Lee County, ALABAMA, found infested for the first time and new finds made outside of regulated area of Calhoun, Perry, St. Clair and Elmore Counties. Migration of adults in Mobile area nurseries serious problem this year. Collected for the first time in Lafourche Parish, LOUISIANA. New infestation found in town of Lepanto, Poinsett County, Arkansas, and small extensions found at several other infested areas. Collected for the first time in Lincoln County, TENNESSEE, and extensions found in several other counties. Collected for the first time in Calhoun County, SOUTH CAROLINA. Small extensions found in several other counties of the CAROLINAS. (PPC, South. Reg., July Rpt.). ALABAMA - Large portion of Hartselle, Morgan County, now infested. (Smith).

ASIATIC OAK WEEVIL (Cyrtepistomus castaneus) - OHIO - Moderate to heavy populations throughout southern area. Specimens found in Scioto, Pike, Lawrence, Jackson, Vinton and Ross Counties. These are all new county records. In Scioto County, 8-10 adults per tobacco leaf, 4-5 adults per corn leaf and 80-90 adults per 50 sweeps in alfalfa. Many invaded homes or buildings and accumulated in large numbers around lights in evening. (Triplehorn, Lyon).

IMPORTED FIRE ANT (Solenopsis saevissima richteri) - GEORGIA - Collected for the first time in Coffee County in July. (PPC, South. Reg., July Rpt.).

NOCTUID MOTHS (Feltia spp.) - WISCONSIN - Increase in catches of F. ducens and F. herilis noted in Madison and Middleton blacklight trap collections. (Wis. Ins. Sur.).

A NOCTUID MOTH (Catocala maestosa) - VIRGINIA - Larvae this species or near this species covering trunks of 2 pecan trees in Heathsville, Northumberland County; det. by D. M. Weisman. (Coggsdale, July 16). Similar specimens collected on pecan tree trunks in other localities; no records of damage to tree foliage. (Tarpley, Rowell).

BUTTERFLIES - ALABAMA - Populations increased considerably throughout State since August 23; Junonia evarete subsp. coenia, Colias philodice and Danaus plexippus among more common species. All sulfer butterflies moving in southeasterly direction. (McQueen).

CORRECTIONS

CEIR 13(35):1012 - CODLING MOTH (Carpocapsa pomonella) - UTAH - Last line should read: "... show damage at Coalville, Summit County. (Knowlton)."

LIGHT TRAP COLLECTIONS

	Temperature °F.	Precipitation	Type of trap *	Agrotis ipsilon (black cutworm)	Carpocapsa pomonella (codling moth)	Chorizagrotis auxiliaris (army cutworm)	Estigmene acrea (salt-marsh caterpillar)	Faronta diffusa (wheat head armyworm)	Feltia subterranea (granulate cutworm)	Heliothis virescens (tobacco budworm)	Heliothis zea (bollworm, corn earworm)	Laphygma frugiperda (fall armyworm)	Loxostege commixtalis (alfalfa webworm)	Loxostege similalis (garden webworm)	Loxostege sticticalis (beet webworm)	Ostrinia nubilalis (European corn borer)	Peridroma saucia (variegated cutworm)	Prodenia ornithogalli (yellow-striped armyworm)	Protoparce quinquemaculata (tomato hornworm)	Protoparce sexta (tobacco hornworm)	Pseudaletia unipuncta (armyworm)	Spodoptera exigua (beet armyworm)	Trichoplusia ni (cabbage looper)	Major crop **
ARKANSAS																								
Kelso 8/29-9/4											91						6				8			
Fayetteville 8/29-9/4											41													
CALIFORNIA																								
Davis 8/31-9/6				39			23		40		7						4			21	370	90	6	Misc.
DELAWARE																								
Sussex 8/30-9/3											796					335								
FLORIDA																								
Gainesville 9/3			BL						2		1							4						
ILLINOIS (County)																								
Champaign 8/30-9/5				13							25	40				8	56	14		7	105			
INDIANA (Counties)																								
Vanderburgh 8/28-9/2											11					12		1			1			
Lawrence 8/23-28				14							3						11	5	4	13	6			
Tippecanoe 8/27-9/2				1							1						1		2		6			
Jasper 8/27-31				7							1					1	6		9	1	9			
Marshall 8/24-9/1											12					35			3	3				
La Porte 8/27-9/2				2							2						13				11			
Howard 8/27-9/2											20					21				2				
MARYLAND																								
Centreville 8/28-9/3				10							126	11				120	2		18		25			
MICHIGAN (Counties)																								
Livingston 8/27-9/2			BL		4																			
Berrien 8/31-9/6			BL	9												9	11				21		6	
Monroe 8/31-9/6			BL	8													8	2			11		5	
Wayne 8/31-9/6			BL	2												5	4				4			
Macomb 8/31-9/6			2 BL	17												28	13	5			30		8	
Washtenaw 8/31-9/6			BL	7												6	6				8		2	
Jackson 8/31-9/6			BL	3												7	2				3			
Livingston 8/31-9/6			2 BL	20												40	18	1			42			
Barry 8/31-9/6			BL	5												7	3				19			
Kent 8/31-9/6			2 BL	18												28	17				55			
Newaygo 8/31-9/6			BL	8												8	4				9		2	
Monroe 8/27-9/2			BL								2													
Berrien 8/27-9/2			BL								2													
Macomb 8/27-9/2			BL								1													

(Continued on page 1091)

* BL = blacklight; I = incandescent; MV = mercury vapor ; O = other

** alf. = alfalfa; beet = garden beet and/or sugar beet; cole = cole crops (crucifers); cott. = cotton; FC = field corn; grain = small grains; leg. = legumes (unspecified); lett. = lettuce; pean. = peanut; pepp. = pepper; pot. = potatoes; SC = sweet corn; sol. = solanaceous plants (unspecified); soy. = soybean; TC = truck crops (unspecified or mixed); tob. = tobacco; tom. = tomato.

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MISSISSIPPI																								
Stoneville 8/23-29	69-100	trace	MV						56	112	1379	16						416		32	464	16	10872	
Stoneville 8/23-29	69-100	trace	BL	16					112	96	3328	16						476		13	400	64	5952	
Stoneville 8/30-9/5	61-96	0.47	MV	1					36	8	275	16						140		36	128	36	3164	
Stoneville 8/30-9/5	61-96	0.47	BL	4					64	11	953	64						232		25	236	104	1712	
NEBRASKA																								
Lincoln 8/22-28				141				49		2	164	382				116	44		1	13	256			
Lincoln 8/29-9/4				47				9		3	44	199				111	4	2		3	89			
Kearney 8/14																2		1						
North Platte 8/21-27				79		1		41		20	94	1				130	25	71	3	46	28			
McCook 8/14-17				126				61		45	65					42	4	96	1	18	29			
McCook 8/19-24				45				20		19	64					76	6	61		17	17			
Ogallala 8/8-12				24				6			1						2			1	5			
Scotts Bluff Expt. Sta. 8/14-20				14				121		4	9						16		1		19			
Scotts Bluff Expt. Sta. 8/21-27				15		2		19		2	17						19		7		35			
Gering 8/7-13				60				120		13	5						59		3		32			
Gering 8/14-20				42		1		62		18	17						10		6		39			
Gering 8/21-25				29		5		50		11	10						8		4		24			
NORTH DAKOTA																								
Fargo 8/19				21							1				15	267	33				81		13	
Emrick 8/19				1				2							14	48					3			
Linton 8/19				1				12			1				550	7					22			
Bottineau 8/19															24	1	2				1			
Trotters 8/19				1				1							2	1	2				12			
NEW JERSEY																								
Evesboro 8/29											2					1			3		42			SC
OHIO																								
Wooster 8/30-9/6	51-76	0.03		12							3					2					20			
Ripley 8/31																				1				
Marietta 8/29-9/3				11																19	52			
Columbus 9/3																					54			
Hoytville 9/3																					3			
SOUTH CAROLINA																								
Charleston 8/26-9/1	64-88	1.36	BL	7			7		38	4	100	21						30		15	16		12	
Clemson 8/17-23				19					1		52	14					3	84	1	3	14		7	
Charleston 9/2-8	63-90	0.50	BL	6			5		57	4	97	25						13	1	60	25		14	

(Continued on page 1092)

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TEXAS																								
Waco 8/31-9/6			BL	15			2		47		923						25	118			141		2285	
WISCONSIN																								
Janesville 8/27-9/2			BL								12					189					40			
Darien 8/27-9/2			BL								2					79					20			
Delavan 8/27-9/2			BL								3					37					16			
Evansville 8/27-9/2			BL								8					63					33			
Madison 8/28-9/2			BL			9					1					2					30			
Middleton 8/27-9/3			BL	13		4										6	5				44			
De Forest 8/27-9/2			BL	87							6					12	6				68			
Arlington 8/27-9/2			BL	12							54					92	3				25			
Beaver Dam 8/27-9/2			BL								18					181					32			
Fox Lake 8/27-9/2			2 BL								107					451					35			
Oakfield 8/27-9/2			BL								5					40					14			
Wayne 8/27-9/2			BL													6					18			
Theresa 8/27-9/2			BL								1					18					11			
Nenno 8/27-9/2			BL													18					23			
Cedar Grove 8/27-9/2			BL	28							36					10	4				63			
Waldo 8/27-9/2			BL								2					11					14			

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HAWAIIAN INSECT NOTES

The following notes on Hawaii insect conditions were presented at the 692nd meeting of the Hawaiian Entomological Society held on August 12, 1963.

SPOTTED GARDEN SLUG (*Limax maximus*) was found for the first time on the Island of Maui on July 11, 1963. A large specimen was collected by Nobuo Miyahira at Haleakala acres, crawling on the outside wall of a building. On Oahu, this species was first collected in upper Manoa Valley in 1949. Det. by C. E. Pemberton. (Mabel Chong).

SCARABS (*Onthophagus catta* and *Copris incertus*) - Investigation of damage to roofing paper on a home in Pupukea, Oahu, during early July showed these 2 species to be responsible. Approximately 90 percent of beetles involved were *O. catta*. The section of roof damaged was part of a sun deck that had been railed off and in which had been placed a large electrocuting-type light trap. Numerous dead beetles were piled up in the corners. Live beetles had moved to the corners and chewed through roofing made of 3 layers of 40# roofing felt and a top of 70# fiber glass felt, with asphalt binder between each layer. The beetles had chewed holes of 2-3 inches in diameter, exposing the lumber underneath. (H. Nakao).

AN ENSIGN SCALE (*Arctothezia occidentalis*) - Several specimens (one mature female and 4 pre-adult and nymphal females) were collected at 8,000 feet elevation on rim of Haleakala Crater, Haleakala National Park, Island of Maui, on July 15, 1963. The specimens were found associated with roots of a bunchgrass (*Agrostis sandwicensis*), which is common in the area. This is a new insect record for Hawaii, and only the second ortheziid scale known to be established in Hawaii; the other being GREENHOUSE ORTHEZIA (*Orthezia insignis*). (J. W. Beardsley).

A ROOT APHID (*Rhopalosiphum rufiabdominalis*) collected from roots of yellow nut sedge (*Cyperus esculentus*) near Pepeekeo, Hawaii, on May 23, 1963. This is a new island record and a new host plant record for this species previously known in the State only from Oahu on *Cyperus* sp. (J. W. Beardsley).

A MANTID (*Tenodera australasiae*) - Adult and an empty ootheca were collected on Molokai during June 1963; the first at the airport and the second at Mapulehu, 25 miles distant. An ootheca, containing viable eggs which hatched in Honolulu, was collected near Lahaina, Maui, on July 11, 1963. These constitute new island records for *T. australasiae*, which was previously known only from Oahu. (J. W. Beardsley).

A MYMARID (*Patasson calendrae*) - This minute hymenopterous parasite of eggs of *Sphenophorus* spp. is being reared from parasitized eggs received from F. A. Bianchi in Columbia, Missouri. It is hoped that this parasite will become established in Hawaii and aid in the control of a billbug (*Sphenophorus venatus vestitus*), which has damaged zoysia lawns and sugarcane seedlings in the State. (J. W. Beardsley).

A CHRYSOMELID (*Octotoma scabripennis*) was recovered from lantana in the White Sands Beach area, Kailua-Keauhou Road, Kona, Hawaii, on July 13, 1963, and was subsequently discovered at Kahauloa, Kona, where it was the dominant species on one lantana clump. This latter location was the release point for a cerambycid (*Plagiohammus spinipennis*) in late December 1960. The presence of *O. scabripennis* in both locations indicates that the species is well adapted to both dry and wet habitats. *O. scabripennis* was first released in 1902, but apparently failed to become established. It was reintroduced in 1954 and 1955 from Mexico; recovery 9 years later was approximately 18 miles from the nearest release point. (C. J. Davis).

PUNCTUREVINE WEEVILS (*Microlarinus* spp.) - Shipments of the stem feeding species, *M. lypriformis*, were received from California on July 7, 1963, and released at west Kauai for control of the weed pest, *Tribulus terrestris*. Riker mounts showing seed damage to native puncturevine, *Tribulus cistoides*, by the seed feeding species, *M. lareynii*, were exhibited. (C. J. Davis).

SOUTHERN GREEN STINK BUG (*Nezara viridula* var. *smaragdula*) - In addition to infestations found between Kailua and Keauhou, Kona, this pest was also found at Napoopoo, Honaunau, Hookena, Hilo and at Paauhau, Hamakua Coast. Chemical eradicative measures discontinued; biological control station established at Honaunau through cooperation of City of Refuge National Historical Park. Other stations are being organized in Hilo and the Hamakua Coast. An appropriation of $13,300 was made from the Governor's contingent fund to increase laboratory production and distribution of parasites of this pest on Oahu, Hawaii and Kauai. Maui is also included in the program. (C. J. Davis).

A CERAMBYCID (*Plagithmysus newelli*) - Specimens of this interesting endemic species were reared from *Nicotiana glauca* collected at Auwahi, Maui, by Nobuo Miyahira. K. Maehler bred *P. newelli* from the same host on Maui in 1948 and this was the first record of this native beetle breeding in an exotic host. The native host of this species is not known. (C. J. Davis).

Spring and Early Summer Observations on the Alfalfa Weevil and Other Forage Crop Insects in Massachusetts-1963

F. R. Shaw and W. Ziener

Alfalfa weevil (*Hypera postica*) has caused extensive damage in some untreated alfalfa fields in Massachusetts in 1963. Population of 2,440 individuals per 100 standard sweeps with a 15-inch net has been recorded.

The following observations are based on population studies made primarily in Hampden and Hampshire Counties. We first observed adults and first and second-stage larvae on May 1 but did not find overwintering eggs. By May 8, up to ten adults and four larvae per 100 sweeps were recorded. On May 17, the first egg punctures were found in stems; these contained an average of 8.0 eggs. The same day 28 adults and 13 larvae, mainly third instar, were obtained per 100 sweeps. On May 22, the populations had increased up to 44 adults and 90 larvae per 100 sweeps, with most of the larvae being third and fourth instars. Up to 37 adults and 477 larvae per 100 sweeps were obtained on May 31. The first pupae in Hampden and Hampshire Counties were noted on the same day. Pupation in Bristol County was noted on May 27 and in southern Berkshire County on June 5.

The maximum population of alfalfa weevil ever recorded in the State, 2,440 specimens per 100 sweeps, was found on June 5 in Berkshire County. This total included 39 adults, 1 pupa, 4 prepupae, 4 first instar, 189 second instar, 984 third instar and 1,219 fourth instar. On the same day, in a count of one-hundred stems, 83 egg punctures were found with an average of 10.6 eggs per puncture. Sixty-seven percent had one, twenty-four percent had two and nine percent had three punctures per stem.

Newly emerged adults were observed on June 13 in Hampden County. Of 29 females captured that day, 18 were old and gravid representing the overwintering brood and 11 lacked developed eggs and were obviously of the new generation.

We recorded also the presence of other insects injurious to forage crops and some of the more important beneficial arthropods as well. A total of 11,688 insects and insect relatives was determined and the data are summarized below.

Abundance of Forage Crop Insects in Massachusetts, Spring, 1963

Insect Name or Group	Percent of Total
Aphids:	
Pea aphid - *Acyrthosiphon pisum*	43.6
Beetles:	
Alfalfa weevil - *Hypera postica*	38.0
Clover root curculio - *Sitona hispidula*	2.5
Wireworms - Elateridae	1.4
Miscellaneous beetles	1.0
Hypera punctata	
Hypera nigrirostris	
Sitona scissifrons	
Plant Bugs:	4.1
Mainly the tarnished plant bug, *Lygus lineolaris*, with *Leptopterna dolabratus* and *Trigonotylus ruficornis* being secondary in importance	

Leafhoppers:	3.7
The principal species in order of abundance include *Aceratagallia sanguinolenta*, *Macrosteles fascifrons*, *Draeculacephala* spp., and in Berkshire County *Errastunus ocellaris*	
Miscellaneous Insects:	2.1
Includes grasshoppers, sawflies and caterpillars	
Beneficial Arthropods:	
Lady beetles - Coccinellids	1.6
Spiders and harvestmen	1.1
Nabis ferus	0.8
Chrysopids	0.1

Of particular note is the great increase in the alfalfa weevil. In 1961, this weevil represented only 1.4 percent of all insects; in our 1962 fall survey it comprised 1.8 while in 1963 it rose to 38 percent.

The potato leafhopper (*Empoasca fabae*) thus far has not been particularly abundant. It was first noted in the area on May 16 in Hadley, Hampshire County.

Spittlebug nymphs were first noted on May 8. In Bristol and Berkshire Counties, heavy infestations have been found. In Hampden, Franklin and Hampshire Counties, their abundance was about average.

Alfalfa Weevil Parasite Established in Massachusetts

In May 1962, we released *Bathyplectes curculionis* in two alfalfa fields in Massachusetts. One site was in Franklin County, the other in Bristol County. The parasites were furnished to us by James Huggans and Dr. Carl Blickenstaff, Alfalfa Weevil Investigations, ARS, USDA.

This spring we obtained larvae of the alfalfa weevil from the two release sites. These were sent to James Huggans who reared them and determined the percent parasitism. From the site in Franklin County we obtained 5.6 percent parasitism and 2 percent from the Bristol County release.

This recovery of parasitized weevil larvae in 1963 demonstrated the ability of released *Bathyplectes* to attack the 1962 generation of weevil larvae and to survive the 1962-63 winter season in Massachusetts.

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Peaches (Commodity) IN Colorado (State or District) DURING 1962 (Year)

A.	Pest or pest complex	Lygus bugs, peach twig borer, green peach aphid, two-spotted spider mite, a fruit-tree mite, peach silver mite, a leaf roller
B.	Number of acres[a] produced (From CRS)	No. 7,320
C.	Average yield per acre[a] (From CRS)	Units/ 165 bu.
D.	Price[b] per unit (bu.)[c] (From CRS)	$/ 2.00
E.	Acres[a] needing control	No. 6,920
F.	Acres[a] treated	No. 6,405
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 4.0
	I. Loss in yield, units per acre[a], C x H	Units/ 6.6 bu.
	J. Loss in yield, $ per acre[a], D x I	$/ 13.20
	K. Loss in quality, $ per acre[a]	$/ .10
L.	Yield loss for all acres[a], (E-F) x I	Units 3,399 bu.
M.	Control cost, $ per acre[a]	$/ 12.00
N.	Control cost for all acres[a], F x M	$ 76,860.00
O.	Yield loss for all acres[a], (E-F) x J	$ 6,798.00
P.	Quality loss for all acres[a], (E-F) x K	$ 51.50
Q.	Combined control cost and losses, N + O + P	$ 83,709.50

Comment: The major loss was due to the peach twig borer, two-spotted spider mite and peach silver mite.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Pears (Commodity) IN Colorado (State or District) DURING 1962 (Year)

A.	Pest or pest complex Codling moth, two-spotted spider mite, pear leaf blister mite	
B.	Number of acres[a] produced (From CRS)	No. 580
C.	Average yield per acre[a] (From CRS)	Units/ 382 bu.
D.	Price[b] per unit (bu.)[c] (From CRS)	$/ 2.00
E.	Acres[a] needing control	No. 580
F.	Acres[a] treated	No. 580
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 3.9
	I. Loss in yield, units per acre[a], C x H	Units/ 14.89 bu.
	J. Loss in yield, $ per acre[a], D x I	$/ 29.78
	K. Loss in quality, $ per acre[a]	$/ 2.00
L.	Yield loss for all acres[a], (E-F) x I	Units 8,636 bu.
M.	Control cost, $ per acre[a]	$/ 12.00
N.	Control cost for all acres[a], F x M	$ 6,960.00
O.	Yield loss for all acres[a], (E-F) x J	$ 17,272.40
P.	Quality loss for all acres[a], (E-F) x K	$ 1,160.00
Q.	Combined control cost and losses, N + O + P	$ 25,392.40

Comment: Mites caused considerable loss although controls were applied.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Sugar Beets (Commodity) IN Colorado (State or District) DURING 1962 (Year)

A.	Pest or pest complex Army cutworm, seed-corn beetle, flea beetles, beet webworm, beet leafhopper, garden symphylan		
B.	Number of acres [a] produced (From CRS)	No.	170,000
C.	Average yield per acre [a] (From CRS)	Units/	16.2 ton
D.	Price[b] per unit (ton)[c] (From CRS)	$/	14.00
E.	Acres [a] needing control	No.	35,816
F.	Acres [a] treated	No.	24,418
G.	Reduction due to not treating where needed:		
	H. Loss in yield, percent	%	1.
	I. Loss in yield, units per acre [a], C x H	Units/	.162 ton
	J. Loss in yield, $ per acre [a], D x I	$/	2.27
	K. Loss in quality, $ per acre [a]	$/	negligible
L.	Yield loss for all acres [a], (E-F) x I	Units	1,846.5 ton
M.	Control cost, $ per acre [a]	$/	2.00
N.	Control cost for all acres [a], F x M	$	48,836.00
O.	Yield loss for all acres [a], (E-F) x J	$	25,873.46
P.	Quality loss for all [a], (E-F) x K	$	---
Q.	Combined control cost and losses, N + O + P	$	74,709.46

Comment: Major loss occurred in western Colorado where beet webworm and beet leafhopper occurred in economic numbers.

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Onions (Commodity) IN Colorado (State or District) DURING 1962 (Year)

A.	Pest or pest complex	Onion thrips, onion maggot, onion bulb fly
B.	Number of acres[a] produced (From CRS)	No. 9,000
C.	Average yield per acre[a] (From CRS)	Units/ 287 cwt.
D.	Price[b] per unit (cwt.)[c] (From CRS)	$/ 3.00
E.	Acres[a] needing control	No. 9,000
F.	Acres[a] treated	No. 7,906
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 1.09
	I. Loss in yield, units per acre[a], C x H	Units/ 3.1 cwt.
	J. Loss in yield, $ per acre[a], D x I	$/ 9.30
	K. Loss in quality, $ per ____[a]	$/ negligible
L.	Yield loss for all acres[a], (E-F) x I	Units 3,391.4 cwt.
M.	Control cost, $ per acre[a]	$/ 6.00
N.	Control cost for all acres[a], F x M	$ 47,436
O.	Yield loss for all acres[a], (E-F) x J	$ 10,174.20
P.	Quality loss for all ____[a], (E-F) x K	$ ---
Q.	Combined control cost and losses, N + O + P	$ 57,610.20

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Leonard E. Jenkins

Date 2-14-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Alfalfa hay (Commodity) IN New Mexico (State or District) DURING 1962 (Year)

A. Pest or pest complex Pea aphid, spotted alfalfa aphid, alfalfa caterpillar

B. Number of acres[a] produced (From CRS) No. 156,000

C. Average yield per acre[a] (From CRS) Units/ 4.6 tons

D. Price[b] per unit (ton)[c] (From CRS) $/ 30.00

E. Acres[a] needing control No. 24,000

F. Acres[a] treated No. 6,000

G. Reduction due to not treating where needed:

H. Loss in yield, percent % 2

I. Loss in yield, units per acre[a], C x H Units/ .092 ton

J. Loss in yield, $ per acre[a], D x I $/ 2.760

K. Loss in quality, $ per acre[a] $/ .75

L. Yield loss for all acres[a], (E-F) x I Units 1,656 tons

M. Control cost, $ per acre[a] $/ 5.25

N. Control cost for all acres[a], F x M $ 31,500

O. Yield loss for all acres[a], (E-F) x J $ 49,680

P. Quality loss for all acres[a], (E-F) x K $ 13,500

Q. Combined control cost and losses, N + O + P $ 94,680

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Gerald L. Nielsen, Entomologist

Date 2-8-63

ESTIMATED LOSSES AND PRODUCTION COSTS ATTRIBUTED TO INSECTS AND RELATED ARTHROPODS

ATTACKING Cotton (Commodity) IN New Mexico (State or District) DURING 1962 (Year)

A. Pest or pest complex Bollworm, fleahoppers, lygus bugs, thrips

B.	Number of acres[a] produced (From CRS)	No. 201,000
C.	Average yield per acre[a] (From CRS)	Units/ 657 lbs.
D.	Price[b] per unit (lb.)[c] (From CRS)	$/ .30
E.	Acres[a] needing control	No. 180,000
F.	Acres[a] treated	No. 130,000
G.	Reduction due to not treating where needed:	
	H. Loss in yield, percent	% 11
	I. Loss in yield, units per acre[a], C x H	Units/ 72.27 lbs.
	J. Loss in yield, $ per acre[a], D x I	$/ 21.68
	K. Loss in quality, $ per acre[a]	$/ 2.00
L.	Yield loss for all acres[a], (E-F) x I	Units 3,613,500 lbs.
M.	Control cost, $ per acre[a]	$/ 12.00
N.	Control cost for all acres[a], F x M	$ 1,560,000
O.	Yield loss for all acres[a], (E-F) x J	$ 1,084,000
P.	Quality loss for all acres[a], (E-F) x K	$ 100,000
Q.	Combined control cost and losses, N + O + P	$ 2,744,000

Comment:

a. Acres, head of cattle or other producing units used by Crop Reporting Service.

b. Season average price per unit as given by CRS (describe basis).

c. Bushels, boxes, tons or other marketing units used by CRS; show which in ( ).

Submitted by Gerald L. Nielsen, Entomologist

Date 2-8-63

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